Filed 5/2/13

CERTIFIED FOR PARTIAL PUBLICATION

IN THE COURT OF APPEAL OF THE STATE OF CALIFORNIA

FIFTH APPELLATE DISTRICT

THE PEOPLE, Plaintiff and Respondent, v. KOUA XIONG, Defendant and Appellant.	F062474 (Fresno Super. Ct. No. F09905463) **ORDER MODIFYING OPINION [NO CHANGE IN JUDGMENT]**

THE COURT:

It is ordered that the opinion filed herein on April 30, 2013, be modified as follows:

1. The publication instruction footnote on page 1 is modified to read as follows:

> * Pursuant to California Rules of Court, rules 8.1105(b) and 8.1110, only the introductory paragraph, the Procedural Summary, Facts, parts I., I.A. and I.B. of the Discussion, and the Disposition are certified for publication.

This modification does not affect the judgment.

_____
Kane, J.

WE CONCUR:

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Wiseman, Acting P.J.

_____
Detjen, J.

Filed 4/30/13 (unmodified version)

CERTIFIED FOR PARTIAL PUBLICATION*

IN THE COURT OF APPEAL OF THE STATE OF CALIFORNIA

FIFTH APPELLATE DISTRICT

THE PEOPLE, Plaintiff and Respondent, v. KOUA XIONG, Defendant and Appellant.	F062474 (Super. Ct. No. F09905463) **OPINION**

APPEAL from a judgment of the Superior Court of Fresno County. John F. Vogt, Judge.

Scott Concklin, under appointment by the Court of Appeal, for Defendant and Appellant.

Kamala D. Harris, Attorney General, Dane R. Gillette, Chief Assistant Attorney General, Michael P. Farrell, Assistant Attorney General, Catherine Chatman and Daniel B. Bernstein, Deputy Attorneys General, for Plaintiff and Respondent.

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* Pursuant to California Rules of Court, rules 8.1105(b) and 8.1110, only the Procedural Summary, Facts, parts I., I.A. and I.B. of the Discussion, and the Disposition are certified for publication.

Defendant Koua Xiong was convicted of the first degree murder of a taxi driver, José Jesus Martinez, who was found dead in his taxi, which had crashed into a tree. He had been killed with a single, point-blank gunshot to the back of the head. No suspect came to light until defendant was identified by a "cold hit"—a match of DNA[1] profiles found through the comparison of the DNA profile from the blood found in and on the taxi with an offender database of DNA profiles. On appeal, defendant contends (1) the evidence was insufficient to support the convictions, (2) defense counsel was ineffective for failing to object to the DNA evidence and request a limiting instruction, and (3) the trial court erred in failing to stay the sentence on possession of a firearm pursuant to Penal Code section 654.[2] We will affirm.

PROCEDURAL SUMMARY

On March 10, 2011, the Fresno County District Attorney charged defendant with murder (§ 187, subd. (a); count 1) and possession of a firearm by a felon (former § 12021, subd. (a)(1); count 2). As to count 1, the information also alleged that defendant personally and intentionally discharged a firearm (former § 12022.53, subd. (c)), which proximately caused José's death (former § 12022.53, subd. (d)), and it alleged the special circumstances that the murder occurred during the commission of a robbery (§ 190.2, subd. (a)(17)(A)) and that the victim was operating a taxicab when he was killed (§ 190.25).

A jury found defendant guilty of first degree murder on count 1, found true all of the allegations, and found defendant guilty on count 2. The trial court sentenced him to life in prison without the possibility of parole on count 1, plus a consecutive 25-year-to-life term on the firearm enhancement under former section 12022.53, subdivision (d), and a stayed 20-year term on the firearm enhancement under former section 12022.53,

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1 Deoxyribonucleic acid.

2 All statutory references are to the Penal Code unless otherwise noted.

subdivision (c). On count 2, the court sentenced defendant to the upper term of three years, to be served concurrently with the sentence on count 1.

FACTS

Very early in the morning of March 10, 2009, three taxis were lined up outside the bus station in Fresno, waiting for potential customers. A bus was expected to arrive at 1:45 a.m. Enrique was the driver of the first taxi, and José was the driver of the third taxi, a 1999 Ford Crown Victoria. At about 1:00 a.m., Enrique saw José go into the bus station to use the restroom. When José came back out of the station, they greeted each other, and José went back to his taxi. After José got into his taxi, Enrique noticed in his side mirrors that a man walked up to José's taxi and spoke to him. Enrique could not see the man's face. Enrique watched with interest because he was first in the taxi line and should have gotten the next customer. Enrique saw the man get into José's taxi. José pulled away, made a U-turn, and drove north. It was between 1:15 and 1:20 a.m.

At about 1:30 a.m., a woman and her father were driving east on Kearney Boulevard when they saw a taxi on the side of the road. The taxi was on the north side of Kearney Boulevard, west of Hughes Avenue. The taxi was pointed in the wrong direction. It was very dark, and the woman was not sure if the taxi had hit a tree or if it was just parked, but it was in a strange position to be parked. Her father turned the car around to shine the high beam lights on the taxi. The woman told her father, "I think someone's in the car. I think it hit the tree." She immediately called 911. The person in the driver's seat did not react to the high beams. The woman noticed that the taxi's doors were all closed except for the rear door on the driver's side, which was slightly open. She did not see anyone around or walking away from the taxi. She was afraid because she thought someone had gotten out of the back seat of the taxi.

Officers responded to the scene immediately. The front end of the taxi had collided with a very large palm tree and was badly damaged. Tire tracks showed the taxi had veered off the road before hitting the tree. The ignition key was on and the taxi was

in drive, but the engine was not running. The headlights were still turned on, but they were no longer working. The rear tail lights were still illuminated. The left rear door was wide open and the long center lap belt was hanging out of the door. The right side of the taxi was up against a very large oleander bush. The right rear door was ajar and the front doors were closed.

José was sitting in the driver's seat. He was not wearing a seatbelt. An officer was able to open the driver's door, but two officers had to pull it fully open due to the damaged front quarter panel. José did not have a pulse. (At this point, officers did not realize he had been shot.) His light-colored jacket was almost completely unzipped and pulled open. Blood was smeared all over it. His right arm still rested on the armrest, which was also smeared with blood. Oddly, a watch with a flexible metal band was balanced on top of his forearm. The front airbags had deployed (and deflated) and were smeared with blood. The front passenger seat was pushed forward, particularly on the left side, and twisted in a clockwise manner toward the window.

A large quantity of blood was on the right side of the back seat, and it was smeared on the inside of the right rear door. Outside the right rear door, the area over the door was smeared with blood and free of the dust that covered the rest of the taxi. There were numerous blood smears starting near the right rear door handle and continuing on the right sail panel and rear quarter panel toward the rear of the taxi. Blood smears zigzagged across the top of the trunk. The left rear door was smeared with blood, and the door window had blood drippings 10 inches long. The center post between the left front and rear doors also bore the blood drippings, and the top of the taxi, directly above both doors on the left side, was smeared with blood. The roof edge of the taxi had two dents in the region between the doors on the left side. Near the dents, the paint was freshly chipped and the bare metal exposed. The inside of the left rear door was smeared with blood. The handle of the driver's door was also smeared with blood.

After the driver's door was opened, heavy blood drippings were apparent on the door sill plate. Business cards and papers of the type normally found in a wallet were strewn on the floorboard and on the dirt outside the driver's door. Numerous blood droplets were on the cards and papers. A plastic photograph holder of the type normally found inside a wallet, contained photographs and was on the edge of the driver's seat. A driving log and other papers were on the front passenger seat. No wallet was found, although it was José's custom and habit to carry one.

One shoeprint was found near the right rear of the taxi, next to the oleander, but no others were found. A piece of Mexican money was entangled in the oleander bush, and the bush was bloody. Near the left rear of the taxi, officers found several drops of blood in the dirt. Two officers and a police dog searched the surrounding area within a radius of about 300 yards, but found no one.

An accident investigator estimated that the taxi was traveling about 33 miles per hour when it collided with the palm tree. The taxi was rolling, not braking, and José necessarily had his foot on the accelerator. After the collision, the rear wheels continued to spin in the dirt and probably produced a lot of dust. The dents in the left side of the taxi's roof edge line were induced damage from the sudden change in velocity during the collision. This buckling or caving generally causes paint chips to fly off. A person climbing over the roof of the car would not typically cause damage to the roof edge line, but would more likely dent the middle of the roof. The investigator did not believe the taxi's roof damage was caused by a person.

The bent front passenger seat demonstrated that one unrestrained occupant in the back seat struck the back of the front seat upon the sudden deceleration from 33 to zero miles per hour when the taxi struck the tree. The occupant continued moving until he or she was stopped by the front seat. The seat belts in the back seat showed no signs of having been worn during a collision. The driver's seat belt showed no major stretching,

but it was an older, worn belt. And a seat belt might incur less stretching when an air bag is deployed.

After the collision, the driver's door was no longer sealable. The taxi's doors would not have flown open during the collision; someone had to have opened them.

At about 3:30 a.m., Detective Yee, the primary detective assigned to the case, arrived at the crime scene. He observed the blood inside the taxi, particularly on the back right seat, outside on the right rear of the taxi, and on the oleander bush right outside the right rear door. He also saw a drop of blood in the dirt, but he could find no blood trail leading away from the scene, and he found only one footprint. He looked again after the taxi was lifted from the site, but he still found no other tracks or drops of blood.

Detective Yee described the watch resting on José's arm as a "cheap watch." No fingerprints were found on the watch or anything else.

Detective Yee went to the hospital to observe José's body and to examine his belongings. José's light-colored jacket was smeared with a lot of blood. He had a cell phone, but no wallet. The blood on the jacket was concentrated on the left side of the jacket and around the pockets.

On March 10, 2009, the forensic pathologist performed the autopsy on José's body. The pathologist observed a single gunshot wound to the center of the back of José's head. The muzzle of the gun had been pressed to his head when it was fired. José was instantly incapacitated, his brain ceased functioning within seconds, and he died shortly thereafter. The pathologist estimated the bullet's caliber as about .22, .25, or .32. He did not think it was as large as .38 caliber. José bore a diagonal bruise across his body from the seat belt. His liver suffered a small superficial tear. José did not suffer injuries from the airbag. The pathologist determined that the gunshot was the cause of the death, and the manner of death was homicide. José's blood tested negative for drugs and alcohol.

Fingerprints lifted from the taxi belonged to José's roommate, who was eliminated as a suspect. No gun and no prints belonging to defendant were found inside the taxi. Twenty $1 bills were found inside the owner's manual on the floor.

On March 11, 2009, the taxi was brought to the Department of Justice (DOJ) crime lab in Fresno. Detective Yee spoke to the DNA analyst and left the taxi for her to analyze. The analyst photographed the taxi thoroughly. She noted the blood on various surfaces on the inside and outside of the taxi. She observed that José's jacket had blood on the inside and outside of both pockets and around the hood and back of the jacket.

The analyst took many blood samples from all of these stains, then analyzed the DNA in 16 of the samples, plus the blood drop that had been collected from the dirt at the scene. For each sample, she created a profile of 15 genetic loci, plus one gender marker. The DNA from the blood spatter on the inside of the taxi's windshield matched the DNA from José's blood. The rest of the blood samples all came from the same unknown male, for which the analyst now had a 15-locus DNA profile.[3]

The analyst calculated the rarity of the unknown male's DNA profile in three populations using the allele frequencies from African-American, Caucasian, and Hispanic population databases. The allele frequencies she used were determined by an FBI study. The analyst explained that the frequencies from the three ethnic populations provided an example of approximately how rare the profile was "across the board." She did not use other ethnic databases, such as Asian or Indian databases. Using the three major populations was the DOJ's standard procedure for statistical analysis throughout California. She explained that the unknown male's DNA profile was "extremely rare." She determined that "[t]he statistical chance that [she] would pick an unrelated individual

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[3] The blood on the exterior of José's left pocket was a mixture, the major portion of which was from the same unknown male. The minor portion contained only four minor alleles, which the analyst did not interpret. Those alleles could have come from a DNA source other than blood.

at random that would have the same profile" was approximately "one in two septillion [2 followed by 24 zeros] African-Americans, [one] in 270 sextillion [270 followed by 21 zeros] Caucasians, and [one] in 56 sextillion [56 followed by 21 zeros] Hispanics."

Because the police currently had no suspect in the crime, the analyst entered the unknown male's DNA profile into the Combined DNA Index System (CODIS; an offender database[4]) on May 22, 2009, to see if she could get a match or "hit." This allowed her to compare the unknown male's DNA profile to a database of the DNA profiles entered not only in California but also in the entire country. Initially, no match

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4 "CODIS is the acronym for the 'Combined DNA Index System' and is the generic term used to describe the FBI's program of support for criminal justice DNA databases as well as the software used to run these databases. The National DNA Index System or NDIS is considered one part of CODIS, the national level, containing the DNA profiles contributed by federal, state, and local participating forensic laboratories." (http://www.fbi.gov/about-us/lab/biometric-analysis/codis, under CODIS and NDIS Fact Sheet, as of April 30, 2013.) "The DNA Identification Act of 1994 (42 U.S.C. §14132) authorized the establishment of [the NDIS]. The DNA Act specifies the categories of data that may be maintained in NDIS (convicted offenders, arrestees, legal, detainees, forensic (casework), unidentified human remains, missing persons and relatives of missing persons) as well as requirements for participating laboratories relating to quality assurance, privacy and expungement." (*Ibid.*) "CODIS was established by Congress to assist in providing investigative leads for law enforcement in cases where no suspect has yet been identified, therefore a CODIS hit provides new investigative information on these cases." (*Ibid.*) "CODIS was designed to compare a target DNA record against the DNA records contained in the database. Once a match is identified by the CODIS software, the laboratories involved in the match exchange information to verify the match and establish coordination between their two agencies. The match of the forensic DNA record against the DNA record in the database may be used to establish probable cause to obtain an evidentiary DNA sample from the suspect. The law enforcement agency can use this documentation to obtain a court order authorizing the collection of a known biological reference sample from the offender. The casework laboratory can then perform a DNA analysis on the known biological sample so that this analysis can be presented as evidence in court." (*Ibid.*) In 2008, CODIS contained over 6.7 million offender, arrestee, and forensic profiles; in 2010, it contained over 9.5 million. (http://www.fbi.gov/about-us/lab/biometric-analysis/codis/codis_brochure, as of April 30, 2013.)

was found. But the CODIS system rechecked for matches on a regular basis, and on September 10, 2009, it found a match. The Richmond DOJ lab retested its sample to verify the profile, then notified the analyst of defendant's name.

On September 14, 2009, the analyst called Detective Yee and told him defendant had been found as a match to the DNA profile. Detective Yee located defendant's address on Hughes Avenue, about a mile from the crime scene. Officers went to defendant's house, took him into custody, and brought him to the station for questioning.

The officers placed defendant in an interview room about eight feet square. The room locked from the inside and the only way out was with a department-issued key. Detective Yee read defendant his *Miranda*[5] rights and defendant agreed to speak to Detectives Yee and Villalvazo. The interview was recorded by a hidden camera and the video was played for the jury at trial. In the interview, defendant explained that he sustained an injury to his head about six months earlier when some Mexicans hit him with a two-by-four in an alley. The wound bled and he still had a scar on the front of his face over his right eyebrow and up to his hairline. After they talked a while, Detective Yee showed defendant some photographs of the taxi crashed against the palm tree. At that point, defendant started to yawn and continued to yawn about 40 times, even though he had not yawned before. Defendant denied taking any property from José or being involved with his murder. After the detectives left the room, defendant got up and checked the door to see if it was locked. Detective Villalvazo and another detective, who were watching the video feed, saw defendant jump up onto the table, reach up to a ceiling tile, and push the tile up. Above the ceiling was a crawl space leading to other rooms. Detective Villalvazo thought defendant was trying to escape, so he and the other detective immediately ran into the room. As they entered, defendant was already dropping down and he sat in the chair. He said, "I was looking for a camera or

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5 *Miranda v. Arizona* (1966) 384 U.S. 436.

something." A ceiling tile remained out of place. The detectives handcuffed defendant and escorted him to a holding cell for transport to the jail.

A technician collected DNA from the inside of defendant's mouth with two buccal swabs. Detective Yee delivered the swabs to the DOJ lab so the analyst could compare defendant's DNA profile to that of the unknown male. The analyst explained that this additional testing of a suspect's DNA was required procedure after a cold hit. The analyst created defendant's DNA profile from the cells on the buccal swab, and determined that his profile matched that of the unknown male. At trial, the analyst testified that in her expert opinion, defendant was the same person as the unknown male who left the blood in the taxi.

DISCUSSION

I. Sufficiency of the Evidence

Defendant contends that for various reasons the evidence was insufficient to support his convictions. We reject each of his contentions.

The test of sufficiency of the evidence is whether, reviewing the whole record in the light most favorable to the judgment below, substantial evidence is disclosed such that a reasonable trier of fact could find the essential elements of the crime beyond a reasonable doubt. (*People v. Johnson* (1980) 26 Cal.3d 557, 578; accord, *Jackson v. Virginia* (1979) 443 U.S. 307, 319.) Substantial evidence is evidence that is "reasonable, credible, and of solid value." (*People v. Johnson, supra,* at p. 578.) "[M]ere speculation cannot support a conviction. [Citations.]" (*People v. Marshall* (1997) 15 Cal.4th 1, 35.) An appellate court must "presume in support of the judgment the existence of every fact the trier could reasonably deduce from the evidence." (*People v. Reilly* (1970) 3 Cal.3d 421, 425.) An appellate court must not reweigh the evidence (*People v. Culver* (1973) 10 Cal.3d 542, 548), reappraise the credibility of the witnesses, or resolve factual conflicts, as these are functions reserved for the trier of fact (*In re Frederick G.* (1979) 96 Cal.App.3d 353, 367). Furthermore, an appellate court can only reject evidence accepted

by the trier of fact when the evidence is inherently improbable and impossible of belief. (*People v. Maxwell* (1979) 94 Cal.App.3d 562, 577.) Our sole function is to determine if *any* rational trier of fact could have found the essential elements of the crime beyond a reasonable doubt. (*Jackson v. Virginia, supra*, 443 U.S. at p. 319; *People v. Marshall, supra,* at p. 34.) These principles are applicable regardless of whether the prosecution relies primarily on direct or circumstantial evidence. (*People v. Lenart* (2004) 32 Cal.4th 1107, 1125.)

Viewing the evidence presented in this case in accord with the foregoing principles, we find it to be "reasonable, credible, and of solid value"—hence, "legally sufficient" (*People v. Marshall, supra,* 15 Cal.4th at p. 35)—and accordingly conclude it is sufficient to uphold defendant's convictions.

A. Science

Generally, a person becomes a suspect in a crime for reasons other than his DNA profile. When his DNA is later tested and found to match the DNA left behind by the perpetrator at the crime scene, the evidence against the suspect is enormously strengthened. By contrast, in cold hit cases (also called database search or database "trawl" cases), a person becomes a suspect only because his DNA profile matches the perpetrator's.

"A genetic profile is much like a physical profile or composite sketch—it is a compilation of traits to describe the perpetrator. [T]he more traits described, the more specific the sketch of the perpetrator and the more limited the pool of possible perpetrators." (*People v. Pizarro* (2003) 110 Cal.App.4th 530, 562 (*Pizarro II*), disapproved on other grounds in *People v. Wilson* (2006) 38 Cal.4th 1237, 1250-1251 (*Wilson*).) A match between a suspect's traits and the perpetrator's traits directly incriminates the suspect by demonstrating that he resembles the perpetrator and therefore

could be the perpetrator.[6] But the match alone does not establish the weight of the evidence. Anyone with the same profile could be the perpetrator, and if a large number of people share the profile, the match does not carry much evidentiary weight. Thus, the match requires a second piece of evidence—the statistical frequency of the profile. "The statistical evidence gives the match evidence its weight. It is an expression of the rarity of the perpetrator's profile, the size of the pool of possible perpetrators, and the likelihood of a random match with the perpetrator's profile." (*Pizarro II*, *supra*, at pp. 542, 576.) "The determination of what is often called the 'significance of the match' is a statistical assessment of *how incriminating* it is that the defendant's profile matches the perpetrator's." (*Id.* at p. 576.) The rarer the profile in the population, the more likely the defendant is in fact the perpetrator. (*Id.* at pp. 542, 576; see also *People v. Johnson* (2006) 139 Cal.App.4th 1135, 1147 (*Johnson*); *People v. Venegas* (1998) 18 Cal.4th 47, 82; National Research Council, The Evaluation of Forensic DNA Evidence (1996) p. 127 (NRCII); National Research Council, DNA Technology in Forensic Science (1992) p. 44 (NRCI).)

The genetic traits examined to create a DNA profile are regions or loci of highly variable and repetitive DNA. The function of this type of DNA is unknown, but its polymorphic nature provides an opportunity to identify the differences between people. Because a person inherits a set of chromosomes (22 plus an X or Y) from each parent, every genetic locus has two versions (alleles). For statistical analysis, the frequency with which each possible allele at each locus exists in various populations has been estimated

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6 As we noted in *Pizarro II*, a match between the perpetrator's and the defendant's profiles "does not signify an *absolute* match between the entirety of the perpetrator's DNA and the entirety of the defendant's DNA, which would absolutely prove the perpetrator and the defendant are the same person. The match is actually between … several regions of an enormous amount of DNA, and therefore it does not absolutely prove identity. What it does prove is that the defendant *could be* the perpetrator." (*Pizarro II, supra,* 110 Cal.App.4th at p. 576.)

through studies of population databases. From these tabulated frequencies, the frequency of a perpetrator's overall DNA profile can be estimated: the frequencies of the two alleles at every locus in a perpetrator's profile are all assigned, then multiplied together to obtain the frequency of the entire multilocus profile in the relevant population. This method is known as the "product rule." The resulting frequency (sometimes called the "rarity statistic") can also be expressed as the probability that the profile of a person selected at random from the relevant population would match the perpetrator's profile. (*Pizarro II, supra,* 110 Cal.App.4th at p. 567; *People v. Nelson* (2008) 43 Cal.4th 1242, 1259 (*Nelson*).) When, as in this case, the perpetrator's profile consists of 15 loci, the resulting statistics establish that the profile is astronomically rare and therefore that a suspect's possession of it is "powerfully incriminating." (*Johnson, supra,* 139 Cal.App.4th at p. 1147.)

The advent of offender databases, such as CODIS, and the ability to search these databases for a potential match to a crime scene DNA profile has led to the resolution of many unsolved cases where no suspect had yet been identified.[7] These cold hit cases have also raised new statistical issues regarding which statistics are relevant and appropriate.

B. Relevance of Statistics in Cold Hit Cases

Defendant first contends the statistical evidence consisted only of random match probabilities, which *Nelson, supra,* 43 Cal.4th 1242 concluded are irrelevant. The People respond that random match probabilities are relevant in cold hit cases. In essence, the parties disagree on the meaning of *Nelson.*

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[7] The FBI's website states that in 2000, CODIS searches resulted in 731 cold hits, and in 2012, they resulted in 153,215 hits. (http://www.fbi.gov/about-us/lab/biometric-analysis/codis/codis_brochure, as of April 30, 2013.)

At the trial in this case, the analyst presented the statistics as random match probabilities. She stated that "[t]he statistical chance that [she] would pick an unrelated individual at random that would have the same profile" "would be approximately one in two septillion [two followed by 24 zeros] African-Americans, [one] in 270 sextillion [270 followed by 21 zeros] Caucasians, and [one] in 56 sextillion [56 followed by 21 zeros] Hispanics." She reported them "in three different ethnic groups, the most popular ethnic groups in the United States to show that the number is rare across the board. [¶] … [¶] We are giving you the rarity of the profile found on the car, so to me it has no ethnic race. So we're showing you an example of approximately how rare this is across the board." She said, "The apparent blood on the taxi, what this number is related to means that this profile is extremely rare and it is the same as the reference sample from [defendant]."

In *Nelson, supra*, 43 Cal.4th 1242, a cold hit case cited by both parties, the prosecution presented similarly astronomical statistics, also calculated by the product rule. (*Id*. at pp. 1249, 1259.) After determining that use of the product rule in cold hit cases was not a new scientific technique requiring a *Kelly*[8] hearing (*Nelson, supra,* at pp. 1260-1265), the court turned to the question of whether statistical evidence obtained by use of the product rule is relevant in a cold hit case. The court explained:

> "'Relevant evidence is evidence "having any tendency in reason to prove or disprove any disputed fact that is of consequence to the determination of the action." (Evid. Code, § 210.) "'The test of relevance is whether the evidence tends, "logically, naturally, and by reasonable inference" to establish material facts such as identity, intent, or motive.'"' (*People v. Wilson, supra*, 38 Cal.4th at p. 1245.) Under this test, the product rule generates relevant evidence even in a cold hit case.
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> "It is certainly correct that, as one treatise that discussed this question put it, 'the picture is more complicated when the defendant has

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8 *People v. Kelly* (1976) 17 Cal.3d 24.

been located through a database search ….' ([4 Faigman et al.,]Modern Scientific Evidence[(2006) Objections to DNA evidence—Presenting incriminating DNA results—Should match probabilities be excluded?—The effect of a database search,] § 32:11, p. 111.) [The court in *United States v. Jenkins* (D.C. 2005) 887 A.2d 1013 (*Jenkins*)] recognized this circumstance. It explained that in a non-cold-hit case, the number derived from the product rule 'represents two concepts: (1) the frequency with which a particular DNA profile would be expected to appear in a population of unrelated people, in other words, how rare is this DNA profile ("rarity statistic"), and (2) the probability of finding a match by randomly selecting one profile from a population of unrelated people, the so-called "random match probability."' (*Jenkins*, *supra*, 887 A.2d at p. 1018.)

"The [*Jenkins*] court explained that the government had conceded 'that in a cold hit case, the product rule derived number no longer accurately represents the probability of finding a matching profile by chance. The fact that many profiles have been searched increases the probability of finding a match.' (*Jenkins*, *supra*, 887 A.2d at p. 1018, fn. omitted.) The footnote in the middle of this quotation elaborated: 'In other words, the product rule number no longer accurately expresses the random match "probability." That same product rule number, however, still accurately expresses the *rarity* of the DNA profile. Random match probability and rarity, while both identical numbers, represent two distinct and separate concepts. Only one of those concepts is affected by a database search: the random match probability.' (*Id*. at p. 1018, fn. 7.) The court noted that 'the "database match probability" [the approach suggested in the NRCII] more accurately represents the chance of finding a cold hit match' and 'can overcome the "ascertainment bias" of database searches. "Ascertainment bias" is a term used to describe the bias that exists when one searches for something rare in a set database.' (*Id*. at pp. 1018-1019.)

"Although the product rule no longer represents the random match probability in a cold hit case, the *Jenkins* court ultimately agreed with the government's argument 'that regardless of the database search, the rarity statistic is still accurately calculated and appropriately considered in assessing the significance of a cold hit…. [W]hile a database search changes the probability of obtaining a match, it does not change how rare the existence of that specific profile is in society as a whole…. This rarity is … both consistent and relevant regardless of the fact that [the defendant's] identification is the product of a database search.' (*Jenkins*, *supra*, 887 A.2d at p. 1019.)

> "In a non-cold-hit case, we said that '[i]t is relevant for the jury to know that most persons of at least major portions of the general population could not have left the evidence samples.' (*People v. Wilson, supra*, 38 Cal.4th at p. 1245.) We agree with other courts that have considered the question (the Court of Appeal in this case; *People v. Johnson, supra*, 139 Cal.App.4th 1135; and *Jenkins, supra*, 887 A.2d 1013) that this remains true even when the suspect is first located through a database search. The database match probability ascertains the probability of a match from a given database. 'But the database is not on trial. Only the defendant is.' (Modern Scientific Evidence, *supra*, § 32:11, pp. 118-119.) Thus, the question of how probable it is that the *defendant*, not the database, is the source of the crime scene DNA remains relevant. (*Id.* at p. 119.) The rarity statistic addresses this question." (*Nelson, supra*, 43 Cal.4th at pp. 1266-1267.)

Nelson's quotations from *Jenkins* and its use of the term "rarity statistic" do suggest that *Nelson* concluded the statistics generated by the product rule are relevant in cold hit cases *only* when stated as a profile frequency (which the government in *Jenkins* called the "rarity statistic"). But, on further consideration, we believe *Nelson* concluded more broadly that both the frequency and the random match probability are relevant in cold hit cases. We will explain.

Despite *Nelson*'s confusing use of the term "rarity statistic," the court spoke in broad terms of the relevance and admissibility of statistics *calculated by the product rule*, which would include both frequencies and random match probabilities. For example, the court stated: "[T]he *product rule* generates relevant evidence even in a cold hit case." (*Nelson, supra,* 43 Cal.4th at p. 1266, italics added.) And it stated: "The conclusion that statistics derived from the *product rule* are admissible in a cold hit case does not mean that they are the *only* statistics that are relevant and admissible." (*Id.* at p. 1267, fn. 3, initial italics added.)

Furthermore, *Nelson*'s use of the terms "frequency" and "random match probability" demonstrates that the court was not drawing a distinction between the two. For example, in the introduction to the case, *Nelson* stated: "The prosecution presented evidence that the *odds that a random person* unrelated to defendant *from the population*

group that produced odds most favorable to him could have *fit the profile* of some of the crime scene evidence are one in 930 sextillion (93 followed by 22 zeros)." (*Nelson, supra,* 43 Cal.4th at p. 1247, italics added.) Then, two pages later, in the fact section, the court stated: "At trial, over objection, the prosecution presented evidence that the DNA profile on the vaginal swab *would occur* at random among unrelated individuals *in about* one in 950 sextillion African-Americans, one in 130 septillion Caucasians, and one in 930 sextillion Hispanics." (*Id.* at p. 1249, italics added.) The first statement is in the form of a random match probability—the odds that a randomly chosen person in the population would have this profile—and the second is in the form of a frequency—how often the profile occurs in the population. Later, *Nelson* stated: "This record indicated that, in a cold hit case, four different methods for calculating the statistical significance of a match have been suggested…. One method is the *random match probability* calculated by use of the product rule. The issue before us is whether this approach is admissible in a cold hit case." (*Nelson, supra,* at p. 1261, italics added.)

A secondary source confirms the holding in *Nelson.* In a legal treatise, Justice Chin—who wrote *Nelson*—stated: "The rarity of the DNA profile shared by the perpetrator and defendant, *expressed by the random match probability statistic*, is always relevant and admissible, even in cold hit cases where the defendant was originally identified in a database search: '"[I]t is relevant for the jury to know that most persons of at least major portions of the general population could not have left the evidence samples." [Citation.] We agree … that this remains true even when the suspect is first located [through] a database search.' (*People v. Nelson*[, *supra,*] 43 Cal.4th [at p.] 1267.)" (Chin et al., Forensic DNA Evidence: Science and the Law (The Rutter Group 2012) Statistics for Autosomal STR Profiles, § 5:4, p. 5-9.)

We entirely agree with the conclusion that both the frequency and the random match probability are relevant in cold hit cases. They are, after all, two ways of representing the same thing, the same numbers couched in different concepts. We are

puzzled, however, by *Nelson*'s statement that "[t]he fact that the match ultimately came about by means of a database search does not deprive the rarity statistic of all relevance." (*Nelson, supra,* 43 Cal.4th at p. 1267.) (We now take *Nelson*'s use of "rarity statistic" to refer to both the frequency and the random match probability, rather than just the frequency.) Understandably, defendant argues that this statement means the database search deprives the statistic of *most* of its relevance. He says the statement renders the statistic "minimally relevant" and "mostly irrelevant" in cold hit cases, such that it provides little weight, even though it remains admissible.

We find *Nelson*'s choice of words curious because it seems to us that the statistics (both the frequency and the random match probability) lose *none* of their relevance when a match is found in a database. First, both refer to the *perpetrator's* profile and therefore are unaffected by any particular defendant or suspect. The frequency assesses how few people possess the perpetrator's profile, and the random match probability assesses how unlikely it is that a random person possesses the perpetrator's profile. They have nothing to do with a particular defendant or suspect, or the manner in which he was found, and they can be calculated before any suspect is located. They are fixed and unchanging. When a suspect is located by whatever means, the frequency and probability of the perpetrator's profile remain the same. They give the jury perspective on how few people are likely to have this profile and how incriminating it is that the defendant has it—regardless of how he was found.

Furthermore, both statistics refer to the rarity of the profile in the *relevant population(s).* In general, an offender database is not the relevant population. Thus, we think the chance of finding a match *in a database* generally does not matter. And we think *Nelson* agrees. (*Nelson, supra,* 43 Cal.4th at p. 1267 ["The database match probability ascertains the probability of a match from a given database. 'But the database is not on trial. Only the defendant is.'"].) But defendant argues, as others do, that the random match probability is not relevant in cold hit cases because the match to the

particular defendant, made by searching an offender database, is not random. In our opinion, this misses the point. The point is the rarity of, or the chance of finding, the *perpetrator's* profile in the *perpetrator's* population(s). The chance of finding a particular defendant in an artificially created "population" of criminals and arrestees is not germane. Assume that a particular defendant is identified after searching a database containing the DNA profiles of 1,000 musicians. Does the search itself or the population of musicians affect the rarity of the perpetrator's profile in the *relevant* population (rarity statistic), or the probability of finding the perpetrator's profile in the *relevant* population (random match probability)? Even though a particular defendant is found by searching a particular database, that database does not necessarily become the relevant population for gauging the rarity of the perpetrator's profile in a meaningful way. Is it helpful to know that one musician in a population of 1,000 musicians matched the perpetrator's profile, or that the chance a musician randomly chosen from a database of 1,000 musicians would match the perpetrator's profile is one in 1,000? We think this information does not help us (or jurors) gauge the profile's rarity in a meaningful way.

Similarly, when a particular defendant is found by searching an offender database, that database of criminals and arrestees does not necessarily become the relevant population for gauging the rarity of the profile in a meaningful way. The relevant populations(s) are generally the major populations in the United States because they provide a jury with the most useful estimates, regardless of the fact that the particular defendant was found as a match by looking through a different population.

As we stated in *Johnson*, and as the FBI explains, a cold hit from a database search is an investigative lead identifying a suspect who might be the perpetrator. (*Johnson, supra,* 139 Cal.App.4th at pp. 1150-1151; http://www.fbi.gov/about-us/lab/biometric-analysis/codis/codis-and-ndis-fact-sheet, as of April 30, 2013.) We do not view it as identification of the perpetrator in the perpetrator's population. We explained in *Johnson*:

> "This brings us to our core point: the database search merely provides law enforcement with an investigative tool, not evidence of guilt. [Citation.] … [¶] In our view, the means by which a particular person comes to be suspected of a crime—the reason law enforcement's investigation focuses on him—is irrelevant to the issue to be decided at trial, i.e., that person's guilt or innocence, except insofar as it provides *independent* evidence of guilt or innocence. For example, assume police are investigating a robbery. The victim identifies 'Joey' as the perpetrator. The means by which 'Joey' becomes the focus of the investigation—the eyewitness identification—is relevant because that identification is itself evidence of guilt. Suppose instead that a surveillance camera captures the robbery on tape. Police use facial recognition software to check the robber's facial features against driver's license photographs. When the computer indicates a match with 'Joey,' officers obtain his name and address from DMV records, then go to his house and interview him. In the course of the interview, 'Joey' confesses. Whether facial recognition software is discerning and accurate enough to select *the* perpetrator, or whether it declared a match involving many different people who resembled 'Joey,' or how many driver's license photographs were searched by the software, is immaterial: what matters is the subsequent confirmatory investigation.
>
> "Stated another way, the fact that the perpetrator's features appear to match those of someone in the DMV database does not affect the strength of the evidence against 'Joey'; it is simply a starting point for the investigation. Similarly, the fact that here, the genetic profile from the evidence sample (the perpetrator's profile) matched the profile of someone in a database of criminal offenders, does not affect the strength of the evidence against appellant. The strength of the evidence against him (at least in terms of the DNA evidence) depends upon the confirmatory match between *his* profile and that of the perpetrator, and the calculation of the frequency of the *perpetrator's* profile in the relevant population. That population is the population of possible perpetrators, not the population of convicted offenders whose DNA has been entered into CODIS. The fact appellant was first identified as a possible suspect based on a database search simply does not matter." (*Johnson, supra,* 139 Cal.App.4th at pp. 1150-1151, fns. omitted.)

Defendant asserts that the prosecution in this case should have introduced an alternative statistic, such as the database match probability mentioned by *Jenkins* and *Nelson.* (See *Nelson, supra,* 43 Cal.4th at p. 1262.) We acknowledge that if the chance of finding a particular defendant in an artificially created "population" of criminals and

arrestees *is* the point, then an appropriate statistic should be determined. The database match probability is a statistic that is modified by the size of the database searched. It "was suggested [by NRCII]. [U]nder this approach, 'the expected frequency of the profile could be calculated through use of the product rule, and the result could then be multiplied by the number of profiles in the databank. The result would be the expected frequency of the profile in a sample the size of the databank and thus the random chance of finding a match in a sample of that size. The result may be significant when few loci are tested and the discriminatory power of the testing is limited, but the significance tends to disappear when many loci are tested.' [Citation.] The *Jenkins* court called this method the 'database match probability' because it gives the probability of a match from the database. [Citation.]" (*Ibid.*, fn. omitted.)[9]

Defendant notes that in this case no evidence was presented on the size of the database searched. But the analyst did state that CODIS compared defendant's profile to all the profiles entered in the state and nation. Thus, we might assume that in 2009, CODIS contained approximately nine million profiles. (See fn. 4, *ante.*) Using that number as the approximate size of the offender database, we would multiply the one-in-some-number fractions by nine million with the following results: one in two septillion (two followed by 24 zeros) would become one in 220 quadrillion (220 followed by 15 zeros); one in 270 sextillion (270 followed by 21 zeros) would become one in 30 quadrillion (30 followed by 15 zeros); and one in 56 sextillion (56 followed by

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9 *Nelson* gave an example to help explain this method: "Assume the product rule calculated random match odds of one in 1,000,000. If a single suspect were compared and a match found, the result would be surprising unless the suspect were the actual donor of the evidence. But if a database of 100,000 were searched, the odds—or database match probability—would be about one in 10 that a match would be found even if the actual donor were not in the database. Thus, a match would be less surprising. If the database had a million profiles, at least one match would be expected even if the actual donor was not in the databa[se]." (*Nelson, supra*, 43 Cal.4th at p. 1262.)

24 zeros) would become one in 6.2 quadrillion (6.2 followed by 15 zeros). These numbers are certainly more favorable to defendant, making the profile more common, but they are still astronomical.[10] The 15-loci profile in this case is so astronomically rare in the most common populations in the United States that even when the statistics are multiplied by nine million, the profile remains astronomically rare in the CODIS offender database. We do not believe the jurors would have found these numbers—quadrillions instead of sextillions and septillions—significantly less compelling. We conclude that use of the database match probability in this case would not likely have made a difference, and therefore any error in its omission, an error that we do not find, was harmless. (*People v. Watson* (1956) 46 Cal.2d 818, 834-835.)

In sum, the evidence in this case was of a 15-loci profile so rare, in terms of the total world population, that it constituted "powerfully incriminating evidence." (*Johnson, supra,* 139 Cal.App.4th at p. 1147.) This is so even assuming the calculations, or manner in which they were described for or presented to the jury, were somehow inaccurate in terms of precisely what statistic they represented. (See *McDaniel v. Brown* (2010) 558 U.S. 120, 124, 132 [DNA evidence with random match probability of one in 3,000,000 remained "powerful[ly] inculpatory evidence" even though expert overstated probative value and testing after trial showed random match probability of one in 10,000]; *People v. Robinson* (2010) 47 Cal.4th 1104, 1142 (*Robinson*) [while DNA profile match does not guarantee individual is guilty, studies have shown that the chance a positive match does

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10 Statistics in cases like this one, especially where the profile includes 13 to 15 loci, are typically described as "astronomical" (e.g., *Nelson, supra,* 43 Cal.4th at p. 1259) because the denominators are incredibly large, but because the statistics are fractions, they are actually incredibly small. In other words, the frequency of the profile in the relevant population(s) is extremely rare, and the chance that a randomly chosen person in the relevant population(s) would match is extremely low.

not belong to same person may be less than one in 500 million].) The statistical evidence was relevant and substantial.

C. Statistic from Asian Population[*]

Defendant also maintains that the prosecution was required to provide a statistic derived from an Asian database because defendant is Asian, and he argues that the analyst's opinion that a Hmong statistic would not be significantly different from the other ethnic statistics was speculative, baseless, and insubstantial.

1. Facts

On direct examination, the analyst explained that the three most popular ethnic populations in the United States were used "to show that the number is rare across the board." She explained that she did not use an Asian population: "We are giving you the rarity of the profile found on the car, so to me it has no ethnic race. [W]e're showing you an example of approximately how rare this is across the board. So … the blood on the car has no race to me."

On cross-examination, the analyst explained that the statistics she provided were the statistics "from the blood on the vehicle," "the unknown blood from the evidence." "It is the statistical chance that I would choose someone at random that would have the same DNA profile as the DNA off the apparent blood from the vehicle." Thus, even though she learned that defendant was Hmong, she did not calculate the probability in a Hmong population. She believed databases for Asian populations existed and she agreed that the random match probability might be different and might be lower. Defense counsel attempted to explain what he meant by "lower" in this context: "And when I say 'lower,' you know, the highest number you've got is in your comparison against African-Americans …. [¶] … [¶] If you compared [the three numbers] to other Asian or southeast Asian or Hmong, it would be lower than the numbers you see on this piece of

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[*] See footnote, *ante*, page 1.

paper?" The analyst's response and the discussion that followed demonstrated that the analyst and both counsel understood "lower" to mean a lower *rarity* (such that the profile would occur *more* frequently in the population), not a lower frequency or probability of a random match:

> "A The fact that I gave the blood on the vehicle the statistic, I don't know what ethnicity the blood on the vehicle is. So to me in our daily procedures at DOJ we give a statistic in the most popular ethnicities in the United States of America, so African-Americans, Caucasians and Hispanics, to show that across the board this profile's rare. [¶] Would it be different if I compared it to a Hmong database? Yes. Would it be lower? Maybe. But at the same time it wouldn't be significantly lower.
>
> "Q What you're saying is that when you pulled the blood off this vehicle …, you didn't know the ethnicity of that blood; is that right?
>
> "A No.
>
> "Q But you knew the ethnicity of the suspect after you got the CODIS hit, didn't you? [¶] … [¶]
>
> "[A] Yes.
>
> "[Q] And you didn't rerun it against the database of other people from that ethnicity?
>
> "A Because that's not in our daily procedures, no.
>
> "Q And if you run it against a person of his ethnicity or a group of people of his ethnicity, the coincidence wouldn't be as rare?
>
> "A I don't know.
>
> "Q And you don't know because you didn't do that?
>
> "A Yes."

On redirect, the analyst repeated that using the three ethnic populations provides "approximations of how rare a profile is." Because it is impossible to test everyone in the world, estimations are all that can be produced. The DOJ's statistical protocol was the same regardless of the case. The analyst had never used an Asian database or an Indian

database in her analyses, although she was sure it had been done. The DOJ protocol, however, used the allele frequencies generated by the FBI in the three populations. She stated that if the number would have been lower in a Hmong database, "[i]t wouldn't have been significantly lower." On recross-examination, she agreed that she did not know if the number would have been lower because she had not calculated it.

2. Asian Statistic

Defendant argues: "Given that the People's theory was that the perpetrator was Asian, it was the People's burden to provide a relevant statistical analysis demonstrating the rarity of the profile in the Asian population." This statement is incorrect. The prosecution's theory was *not* that the perpetrator was Asian. It was that the perpetrator was a male with a certain 15-locus genetic profile. The perpetrator's ethnicity was *unknown*. For this reason, the prosecution presented statistical data for occurrence of the perpetrator's DNA profile in the three most common ethnic populations. As we will explain, this practice has been approved by the Supreme Court in *Wilson, supra,* 38 Cal.4th 1237.

In *Wilson,* as in this case, the prosecution presented evidence of the frequency of the perpetrator's profile in the three most common population groups in the United States—Caucasian, African-American, and Hispanic—despite the fact there was no evidence of the race or ethnicity of the perpetrator aside from evidence that the defendant was the perpetrator. (*Wilson, supra,* 38 Cal.4th at p. 1240.) *Wilson* agreed with our condemnation of the presentation of *only* a statistic calculated from the defendant's ethnic population. (*Id.* at p. 1243; *People v. Pizarro* (1992) 10 Cal.App.4th 57, 93-94; *Pizarro II, supra,* 110 Cal.App.4th at pp. 629-631 & fn. 79.) And *Wilson* rejected the notion that the evidence before it was improperly admitted because frequency ranges were given only for the three most common population groups, rather than all possible groups to which the perpetrator could have belonged. (*Wilson, supra,* at pp. 1249-1250.) The court stated: "Although giving results for all possible population groups would be

permissible, doing so is not required to give relevance to the range of possibilities. Furthermore, it is not clear whether it is realistically feasible to include all population groups." (*Id.* at p. 1250.) "'By presenting the data for the major racial components of the population, when there is no independent evidence of the perpetrator's race, the prosecution presents the data necessary for the jury to evaluate the likelihood that the crime scene DNA came from someone other than the defendant.'" (*Id.* at p. 1247.) The court concluded: "In this case, [the analyst] provided information regarding the three most numerous population groups. This made her testimony relevant and admissible." (*Id.* at p. 1250.)

A few years later, in *People v. Doolin* (2009) 45 Cal.4th 390, the Supreme Court cited *Wilson* and concluded: "The prosecution in this case presented DNA frequency statistics for the African-American, Caucasian, and Hispanic population groups. Since [Doolin's] trial, we have concluded that expert testimony on DNA profiling frequencies for these specific population groups is admissible even in the absence of independent evidence of the perpetrator's ethnicity. [Citation.]" (*People v. Doolin, supra,* at p. 449.)

And even more recently, the court in *People v. Cua* (2011) 191 Cal.App.4th 582 (*Cua*) noted:

> """One strangely persistent fallacy in the interpretation of DNA evidence is that the relevant ethnic or racial population in which to estimate a DNA profile frequency necessarily is that of the defendant. The issue has been cogently analyzed, and it should be clear that the relevant population is the entire class of plausible perpetrators."' (*People v. Wilson, supra,* 38 Cal.4th at p. 1243, quoting Kaye, *Logical Relevance*[: *Problems with the Reference Population and DNA Mixtures in* People v. Pizarro, (2004)] 3 Law, Probability & Risk at p. 211.) As Professor Kaye notes, 'it is critical to understand the limited role that the defendant's ethnic or racial status plays in evaluating the evidence of a match…. The relevant population consists of all people who might have been the source of the evidence sample. In most cases, this will not be people with a defendant's peculiar ancestry, but people of many ethnic groups.' (Kaye, *DNA Evidence*[: *Probability, Population Genetics, and the Courts* (1993)] 7 Harv. J.L. & Tech. 101,] 137-138.)" (*Cua, supra,* 191 Cal.App.4th at p. 602.)

As these authorities attest, an ethnic statistic based on defendant's ethnicity was not required and use of the three common populations was appropriate.

Defendant argues that *Wilson* addressed only admissibility, not sufficiency to support a conviction, and that an Asian statistic was required to make the evidence substantial in this case. For the reasons we have explained, this is incorrect. We also note that there was no evidence suggesting that either the perpetrator or defendant belonged to an unusually isolated Asian subgroup, which might have affected the allele frequencies. (See NRCII, *supra,* at p. 122.)[11]

3. Expert Opinion Regarding Hmong Statistic

Defendant challenges the analyst's opinion that a Hmong statistic would not have been significantly different from the other ethnic statistics was unsupported and did not constitute substantial evidence.

An expert witness may testify on "a subject that is sufficiently beyond common experience that the opinion of an expert would assist the trier of fact" and "[b]ased on matter (including his special knowledge, skill, experience, training, and education) perceived by or personally known to the witness or made known to him at or before the hearing, whether or not admissible, that is of a type that reasonably may be relied upon by an expert in forming an opinion upon the subject to which his testimony relates, unless an expert is precluded by law from using such matter as a basis for his opinion." (Evid. Code, § 801.)

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11 "Sometimes there is evidence that the suspect and other possible sources of the sample belong to the same subgroup. That can happen, e.g., if they are all members of an isolated village. In [that] case, a modification of the procedure is desirable. [¶] Recommendation 4.2: If the particular subpopulation from which the evidence sample came is known, the allele frequencies for the specific subgroup should be used as described in Recommendation 4.1. If allele frequencies for the subgroup are not available, although data for the full population are, then the calculations should use the population-structure Equations 4.10 for each locus, and the resulting values should then be multiplied." (NRCII, *supra,* at p. 122, boldface omitted.)

In this case, the jurors were instructed with CALCRIM No. 332 as follows:

> "Witnesses were allowed to testify as experts and to give opinions. You must consider the opinions, but you are not required to accept them as true or correct. The meaning and importance of any opinion are for you to decide. In evaluating the believability of an expert witness, follow the instructions about the believability of witnesses generally. In addition, consider the expert's knowledge, skill, experience, training, and education, the reasons the expert gave for any opinion, and the facts or information on which the expert relied in reaching that opinion. You must decide whether the information on which the expert relied was true and accurate. You may disregard any opinion that you find unbelievable, unreliable, unreasonable, or unsupported by the evidence. [¶] [An expert witness may be asked a hypothetical question. A hypothetical question asks the witness to assume certain facts are true and to give an opinion based on the assumed facts. It is up to you to decide whether an assumed fact has been proved. If you conclude that an assumed fact is not true, consider the effect of the expert's reliance on that fact in evaluating the expert's opinion.] [¶] [If the expert witnesses disagreed with one another, you should weigh each opinion against the others. You should examine the reasons given for each opinion and the facts or other matters on which each witness relied. You may also compare the experts' qualifications."

According to this instruction, the jurors may have chosen to believe the analyst's opinion, believing it was based on her experience and education, but they were also free to disregard the opinion if they believed it was speculative or baseless. Finally, defendant was not precluded from presenting his own expert with a different opinion.

D. Source Attribution

Defendant also argues the analyst's opinion that defendant was "the same person" as the unknown male who left the blood in the taxi was improper because it was speculative, unfounded, and tantamount to an opinion of defendant's guilt. We reject this contention for the reasons explained by the court in *Cua, supra,* 191 Cal.App.4th 582, when it held this type of statement was not improper.

> "Almost 15 years ago, the 1996 [NRCII] Report observed that '[w]ith an increasing number of loci available for forensic analysis, we are approaching the time when each person's profile will be unique (except for identical twins and possibly other close relatives).' ([NRCII], *supra*,

p. 161.) 'Because more population data and loci already are available, and still more will be available soon, we are approaching the time when many scientists will wish to offer opinions about the source of incriminating DNA. [¶] … There might already be cases in which it is defensible for an expert to assert that, assuming that there has been no sample mishandling or laboratory error, the profile's probable uniqueness means that the two DNA samples come from the same person.' (*Id.* at p. 194.) It has been calculated that the average random match probability for unrelated individuals for even 13 STR loci is less than one in a trillion, even in populations with reduced genetic variability. (Chakraborty et al., *The Utility of Short Tandem Repeat Loci Beyond Human Identification: Implications for Development of New DNA Typing Systems* (1999) 20 Electrophoresis 1682, 1688.)

"Some courts have already recognized that, dependent upon the strength of a match, 'it might be appropriate for the expert to testify that, except for identical twins or maybe close relatives, "'it can be concluded to a reasonable scientific certainty that the evidence sample and the defendant sample came from the same person.'" [Citations.]' (*Nelson, supra,* 43 Cal.4th at p. 1262, fn. 1; see *People v. Johnson*[, (*supra*),] 139 Cal.App.4th [at p.] 1146, fn. 10; see also *People v. Wilson, supra,* 38 Cal.4th at pp. 1248-1249; *People v. Barney, supra,* 8 Cal.App.4th at p. 817; *People v. Allen*[(1999)] 72 Cal.App.4th [1093,]1097 [expert concluded '"within a reasonable degree of scientific certainty"' that defendant was the source of the semen stain based on PCR test matching at a total of nine genetic markers].)

"Our Supreme Court has recently recognized that a genetic profile can be sufficiently unique to be a constitutionally sufficient description of a suspect in support of an arrest warrant. (*People v. Robinson*[, *supra*,] 47 Cal.4th 1104 (*Robinson*).) The court agreed that '"a DNA profile is arguably the most discrete, exclusive means of personal identification possible[ ]" … [and that] "'[a] genetic code describes a person with far greater precision than a physical description or a name.' [Citation.]" [Citation.]' (*Id.* at p. 1134, citations omitted.) In *Robinson,* there was a DNA match at 13 loci, and the prosecution expert testified that there had been no reported cases of two people who are not identical twins matching at all 13 loci. (*Id.* at p. 1115.) The court further observed that '[w]hile a DNA profile match does not guarantee that the individual matched is guilty of the charged offense, studies have shown that the chance a positive match does not belong to the same person may be less than one in 500 million.' (*Id.* at p. 1142, citing inter alia Moyer & Anway, *Biotechnology and the Bar: A Response to the Growing Divide Between Science and the Legal*

Environment (2007) 22 Berkeley Tech L.J. 671, 684, fn. 64.) The United States Supreme Court has said that '[m]odern DNA testing can provide powerful new evidence unlike anything known before. Since its first use in criminal investigations in the mid-1980s, there have been several major advances in DNA technology, culminating in STR technology. It is now often possible to determine whether a biological tissue matches a suspect with near certainty.' (*District Attorney's Office for Third Judicial Dist. v. Osborne*[(2009) 557 U.S. 52, 62].) Our growing experience with use of DNA databases containing genetic samples from known offenders to provide 'cold hit' matches of crime scene samples with DNA profiles of criminal suspects belies Cua's argument, unsupported by any expert opinion, that [the criminalist's] testimony was 'scientifically invalid.' (See, e.g., *Nelson, supra,* 43 Cal.4th 1242.)

"The cases cited by Cua do not support his position. In *Nelson* the criminalist, as here, compared 15 loci and found a match at each one. (*Nelson, supra,* 43 Cal.4th at p. 1259.) 'The prosecution presented evidence that the odds that a random person unrelated to defendant from the population group that produced odds most favorable to him could have fit the profile of some of the crime scene evidence [were] one in 930 sextillion (93 followed by 22 zeros).' (*Id.* at p. 1247.) Because of these 'astronomical odds' and the fact that [the] world's total population is only about seven billion, the court recognized that 'this evidence is tantamount to saying that defendant left the evidence at the crime scene.' (*Id.* at pp. 1259, 1247.) As [NRCII] noted, the difference between a vanishingly small probability and an opinion of uniqueness is 'slight.' ([NRCII], *supra,* p. 195.) [¶] … [¶]

"We know of no categorical prohibition, at least in this state, on source attribution—expression by an otherwise qualified expert of an opinion that the quantitative and qualitative correspondence between an evidentiary sample and a known sample from a defendant establishes identity to a reasonable scientific certainty. The reported cases and the scientific literature suggest otherwise. Although the same evidence, and the reports of prosecution experts, were available to Cua for his own examination and analysis, Cua offers no expert opinion that the conclusion reached by the criminalist lacked factual support and was 'scientifically invalid.' Here a match was made between Cua and the single-source sample from the vehicle by a qualified DNA expert, as in *Nelson,* at 15 separate loci. While the criminalist was not asked to calculate the rarity statistic of such a match using the product rule, we can readily infer that the odds would also be here, as in *Nelson,* 'astronomical' and 'tantamount to saying that defendant left the evidence at the crime scene.' (*Nelson, supra,*

43 Cal.4th at pp. 1259, 1247.)" (*Cua, supra,* 191 Cal.App.4th at pp. 598-601, fns. omitted.)

E. Non-DNA Evidence[*]

Defendant contends that, in light of what he describes as insubstantial DNA evidence, the non-DNA evidence was not sufficient to support the convictions.

We have already concluded that the DNA evidence was substantial evidence supporting the convictions. The non-DNA evidence, although not extensive, added to the probability that defendant was the perpetrator. Defendant lived less than a mile from the crime scene. He suffered an injury around March 2009, which bled and left him with a large scar on his forehead. His explanation was that Mexicans hit him with a two-by-four in an alley. He admitted he had stolen and sold his father's .30-caliber gun. He yawned excessively during the interview, but only after the detectives confronted him with the murder. When left alone after the interview, he checked the door, then got up on the table and pushed up a ceiling tile, suggesting he was looking for an escape.

Considering this evidence in addition to the substantial DNA evidence, the evidence supporting defendant's conviction was more than sufficient. "An 'appellate court's reversal for insufficiency of the evidence is in effect a determination that the government's case against the defendant was so lacking that the trial court should have entered a judgment of acquittal.' [Citation.]" (*McDaniel v. Brown, supra,* 558 U.S. at p. 131.) Defendant was not entitled to a judgment of acquittal here, nor is he entitled to reversal for insufficient evidence on appeal.

II. Ineffective Assistance of Counsel[*]

Defendant argues his trial counsel was ineffective for failing to (1) object to the irrelevant random match probability DNA evidence, (2) request a limiting instruction to

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[*] See footnote, *ante,* page 1.

[*] See footnote, *ante,* page 1.

prevent the jury from considering the statistics as evidence of random match probability, (3) object to the expert's opinion that a Hmong statistic would not be significantly lower, and (4) object to the expert's source attribution opinion.

For all of the reasons we have explained, we see no prejudice to defendant based on any failure by defense counsel. Because we find no resulting prejudice, we need not address whether the performance of counsel was deficient. (*Strickland v. Washington* (1984) 466 U.S. 668, 697; *People v. Hester* (2000) 22 Cal.4th 290, 296-297 [if on review court finds that alleged incompetence of counsel was not prejudicial, court need not address whether counsel's actions were deficient].)

III. Section 654*

Lastly, defendant contends the trial court erred in failing to stay the sentence for his possession of a firearm in count 2 pursuant to section 654. He explains that the only evidence he possessed a gun was the inference that he fired a gun in the commission of the murder and robbery. We disagree.

Section 654, subdivision (a) provides in relevant part: "An act or omission that is punishable in different ways by different provisions of law shall be punished under the provision that provides for the longest potential term of imprisonment, but in no case shall the act or omission be punished under more than one provision." Section 654 has been interpreted to prohibit multiple punishments for a single act or an indivisible course of conduct. (*Neal v. State of California* (1960) 55 Cal.2d 11, 19.) "Whether a course of criminal conduct is divisible and therefore gives rise to more than one act within the meaning of section 654 depends on the intent and objective of the actor. If all of the offenses were incident to one objective, the defendant may be punished for any one of such offenses but not for more than one." (*Ibid.*) On the other hand, if the evidence discloses that a defendant entertained multiple criminal objectives independent of and not

* See footnote, *ante*, page 1.

merely incidental to each other, the trial court may impose punishment for independent violations committed in pursuit of each objective even though the violations shared common acts or were part of an otherwise indivisible course of conduct. (*People v. Centers* (1999) 73 Cal.App.4th 84, 98; *People v. Cleveland* (2001) 87 Cal.App.4th 263, 267-268.)

"The determination of whether there was more than one objective is a factual determination, which will not be reversed on appeal unless unsupported by the evidence presented at trial. [Citation.] The factual finding that there was more than one objective must be supported by substantial evidence. [Citation.]" (*People v. Saffle* (1992) 4 Cal.App.4th 434, 438.) "We review the trial court's determination in the light most favorable to the respondent and presume the existence of every fact the trial court could reasonably deduce from the evidence." (*People v. Jones* (2002) 103 Cal.App.4th 1139, 1143 (*Jones*).)

"[S]ection 654 is inapplicable when the evidence shows that the defendant arrived at the scene of his or her primary crime already in possession of the firearm." (*Jones, supra,* 103 Cal.App.4th at p. 1145.) In contrast, section 654 bars multiple punishment when the evidence shows that, at most, fortuitous circumstances put the firearm in the defendant's hand at the instant of committing another offense. (*People v. Vang* (2010) 184 Cal.App.4th 912, 915-916; see also *People v. Ratcliff* (1990) 223 Cal.App.3d 1401, 1413 [§ 654 did not bar multiple punishment where there was evidence that the defendant's possession of the firearm "was not merely simultaneous with the robberies, but continued before, during and after those crimes"].)

In *Jones,* separate punishment for felony firearm possession and shooting at an inhabited dwelling was upheld where the evidence was sufficient to allow the inference that the defendant's "possession of the firearm was antecedent to and separate from the primary offense of shooting at an inhabited dwelling." (*Jones, supra,* 103 Cal.App.4th at p. 1147.) The court explained that the defendant "necessarily must have had either actual

or constructive possession of the gun while riding in the car, as evidenced by his control over and use of the gun during the shooting. Jones's violation of section 12021 was complete the instant Jones had the firearm within his control prior to the shooting." (*Ibid.*) Further, "[i]t strains reason to assume that Jones did not have possession for some period of time before firing shots at the [victim's] home. Any other interpretation would be patently absurd." (*Ibid.*) Therefore, the record supported "a reasonable inference that Jones's possession of the firearm was antecedent to the primary crime." (*Ibid.*)

Just as in *Jones*, the evidence in this case was sufficient to permit an inference that defendant had possession of the gun prior to getting into the taxi and prior to shooting José. There was no evidence that fortuitous circumstances put the gun in defendant's hand at virtually the moment he shot José—for example, that he happened to find the gun in the back seat of the taxi or that José was wielding a gun and defendant wrested it from him. (*Jones, supra,* 103 Cal.App.4th at p. 1145; see, e.g., *People v. Bradford* (1976) 17 Cal.3d 8, 13, 22; *People v. Venegas* (1970) 10 Cal.App.3d 814, 821.) It was reasonable to assume that defendant possessed the gun when he entered the taxi, which was antecedent to the primary crimes, and "[a]ny other interpretation would be patently absurd."[12] (*Jones, supra,* at p. 1147.) Under these circumstances, section 654 did not preclude punishment for possession of a firearm by a felon.

IV. Abstract of Judgment*

In our review of the record, we observed that defendant's abstract of judgment does not comport with the trial court's oral pronouncement of judgment. "'Where there is a discrepancy between the oral pronouncement of judgment and the minute order or the

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12 Furthermore, the evidence permitted an inference that defendant continued to possess the gun after getting out of the taxi because there was no evidence that he left it in the taxi after the shooting.

***** See footnote, *ante,* page 1.

abstract of judgment, the oral pronouncement controls.' [Citations.]" (*People v. Morelos* (2008) 168 Cal.App.4th 758, 768.) "'[A] court has the inherent power to correct clerical errors in its records so as to make these records reflect the true facts. [Citations.] The power exists independently of statute and may be exercised in criminal as well as in civil cases. [Citation.] … The court may correct such errors on its own motion or upon the application of the parties.' [Citation.] Courts may correct clerical errors at any time, and appellate courts (including this one) that have properly assumed jurisdiction of cases have ordered correction of abstracts of judgment that did not accurately reflect the oral judgments of sentencing courts. [Citations.]" (*People v. Mitchell* (2001) 26 Cal.4th 181, 185.)

In its oral pronouncement of judgment, the trial court stayed the 20-year section 12022.53, subdivision (c) enhancement on count 1. The abstract of judgment, however, incorrectly reflects a stayed 25-year-to-life section "12022(c)" enhancement. We will order correction of the abstract.

DISPOSITION

The judgment is affirmed. The trial court is ordered to correct the abstract of judgment to reflect a stayed 20-year section 12022.53, subdivision (c) enhancement on count 1 (rather than a stayed 25-year-to-life section "12022(c)" enhancement). The clerk of the superior court is directed to forward a copy of the amended abstract of judgment to the Department of Corrections and Rehabilitation.

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Kane, J.

WE CONCUR:

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Wiseman, Acting P.J.

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Detjen, J.